

**UTILITY  
PATENT APPLICATION  
TRANSMITTAL**

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Attorney Docket No.

1082-011

First Inventor

Micheal P. Iverson

Title

SYSTEM FOR PERFORMING COUPLED FINITE ANALYSIS

Express Mail Label No.

EL889189823US

**APPLICATION ELEMENTS**

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.  
See 37 CFR 1.27.
3. ☒ Specification [Total Pages **220**]  
(preferred arrangement set forth below)  
- Descriptive title of the Invention  
- Cross Reference to Related Applications  
- Statement Regarding Fed sponsored R & D  
- Reference to sequence listing, a table,  
or a computer program listing appendix  
- Background of the Invention  
- Brief Summary of the Invention  
- Brief Description of the Drawings (if filed)  
- Detailed Description  
- Claim(s)  
- Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets **4**]
5. Oath or Declaration [Total Pages **1**]  
a. ☐ Newly executed (original or copy)  
b. ☐ Copy from a prior application (37 CFR 1.63 (d))  
(for a continuation/divisional with Box 18 completed)  
i. ☐ **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

**ADDRESS TO:**Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

7. ☒ CD-ROM or CD-R in duplicate, large table or  
Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)  
a. ☐ Computer Readable Form (CRF)  
b. Specification Sequence Listing on:  
i. ☐ CD-ROM or CD-R (2 copies); or  
ii. ☐ paper  
c. ☐ Statements verifying identity of above copies

**ACCOMPANYING APPLICATIONS PARTS**

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 C.F.R. §3.73(b) Statement ☐ Power of  
(when there is an assignee) Attorney
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure ☐ Copies of IDS  
Statement (IDS)/PTO-1449 Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
16. ☒ Nonpublication Request under 35 U.S.C. 122  
(b)(2)(B)(i). Applicant must attach form PTO/SB/35  
or its equivalent.
17. ☐ Other: \_\_\_\_\_

18. If a **CONTINUING APPLICATION**, check appropriate box, and supply the requisite information below and in a preliminary amendment,  
or in an Application Data Sheet under 37 CFR 1.76:


- ☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: \_\_\_\_\_ / \_\_\_\_\_  
Prior application information: Examiner \_\_\_\_\_ Group / Art Unit: \_\_\_\_\_

For **CONTINUATION** or **DIVISIONAL APPS** only: The entire disclosure of the prior application, from which an oath or declaration is supplied  
under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference.  
The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

**17. CORRESPONDENCE ADDRESS**☐ Customer Number or Bar Code Labelor ☒ Correspondence address below

(Insert Customer No. or Attach bar code label here)

Name	Sullivan Law Group				
Address	5060 North 40 <sup>th</sup> Street Suite 120				
City	Phoenix	State	Arizona	Zip Code	85018
Country		Telephone	(602) 956-6161	Fax	(602) 956-6262

Name (Print/Type)	Stephen T. Sullivan	Registration No. (Attorney/Agent)	32,444
Signature		Date	November 7, 2001

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any  
comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark  
Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for  
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12-07-01

JC674 U.S. PTO  
11/07/01

# Sullivan Law Group

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JC872 U.S. PTO  
10/005752  
11/07/01

November 7, 2001

***Via Express Mail***

BOX PATENT APPLICATION  
Assistant Commissioner for Patents  
U.S. Patent and Trademark Office  
Washington, D.C. 20231

***Re: Filing of New U.S. Patent Application Entitled "SYSTEM  
FOR PERFORMING COUPLED FINITE ANALYSIS"  
Our Ref. 1082-011***

Dear Sir:

We hereby submit the following papers in connection with the filing of this new U.S. patent application entitled "SYSTEM FOR PERFORMING COUPLED FINITE ANALYSIS," inventors Michael P. Iverson and Daron A. Isaac:

1. Utility Application Transmittal Form (1 page);
2. Specification (219 pages) including claims (4 independent claims and 47 claims total), including Appendices I-III;
3. Abstract of the Disclosure (1 page);
4. Drawing figures (5 figures on 4 pages);
5. Duplicate CD-ROMs with attached transmittal letter;
6. Non-Publication Request (1 page);
7. Fee Transmittal form (1 sheet, 2 copies) and check for \$1,310.00 to cover the filing fee; and
8. Postcard for receipt acknowledgment.

Assistant Commissioner for Patents  
November 7, 2001  
Page 2

The filing fee was determined as follows:


Basic filing fee:	\$740.00
Independent claims in excess of 3 (1 claim @ \$84.00 per claim):	\$84.00
Total claims in excess of 20 (27 claims @ \$18.00 per claim):	<u>\$486.00</u>
<b>Total Filing Fee:</b>	<b>\$1,310.00</b>

If there are any fees due in connection with this application and not satisfied by the attached check, please charge them to our Deposit Account No. 501324.

This application claims the benefit of priority of U.S. Provisional Application No. 60/246,399 filed in the U.S. Patent & Trademark Office on November 7, 2000, the complete disclosure of which is incorporated herein by reference.

Please accord this application a serial number and the filing date of **November 7, 2001.**

Sincerely,



Stephen T. Sullivan  
David S. Taylor

STS/DST/akh  
Enclosures

Assistant Commissioner for Patents

November 7, 2001

Page 3

**CERTIFICATE OF EXPRESS MAIL**

Express Mail Mailing Label No. EL889189823US

Date of Deposit: November 7, 2001

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Anne K Hoole

**CERTIFICATE OF EXPRESS MAILING**

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I hereby certify that the attached drawings (5 figures on 4 sheets) are being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10 on the date indicated above and is addressed, BOX PATENT APPLICATION, Assistant Commissioner for Patents, U.S. Patent and Trademark Office, Washington, D.C. 20231.

Ann K Hoole

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**FEE TRANSMITTAL  
for FY 2002**

Patent fees are subject to annual revision.

**Complete if Known**

Application Number	Unassigned
Filing Date	November 7, 2001
First Named Inventor	Micheal P. Iverson
Examiner Name	Unassigned
Group / Art Unit	Unassigned
Attorney Docket No.	1082-011

**TOTAL AMOUNT OF PAYMENT** (\$) 1310**METHOD OF PAYMENT (check one)**

- 1.
- ☐
- The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit  
Account  
Number

501324

Deposit  
Account  
Name

- ☒
- Charge Any Additional Fee Required
- 
- Under 37 CFR 1.16 and 1.17
- 
- ☐
- Applicant claims small entity status.
- 
- See 37 CFR 1.27

- 2.
- ☐
- Payment Enclosed:

☒ Check    ☐ Credit card    ☐ Money Order    ☐ Other
**FEE CALCULATION****1. BASIC FILING FEE**

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	740
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

**SUBTOTAL (1)**

(\$ 740)

**2. EXTRA CLAIM FEES**

Total Claims	Extra Claims	Fee from below	Fee Paid
47	-20 ** = 27	18	486
Independent Claims	4	-3 ** = 1	84
Multiple Dependent		0	0

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

**SUBTOTAL (2)**

(\$ 570)

\*\*or number previously paid, if greater, For Reissues, see above

**FEE CALCULATION (continued)**

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17 (q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

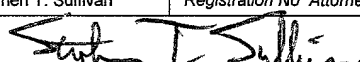
Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)**

(\$ 0)

**SUBMITTED BY****Complete (if applicable)**

Name (Print/Type)	Stephen T. Sullivan	Registration No. Attorney/Agent	32,444	Telephone	(602) 956-6161
Signature				Date	November 7, 2001

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

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# Sullivan Law Group

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November 7, 2001

*Via Express Mail*

BOX PATENT APPLICATION  
Assistant Commissioner for Patents  
U.S. Patent and Trademark Office  
Washington, D.C. 20231

**Re: *Filing of New U.S. Patent Application Entitled "SYSTEM  
FOR PERFORMING COUPLED FINITE ANALYSIS"***  
**Our Ref. 1082-011**

Dear Sir:

This letter accompanies and is filed concurrently with the specification and other documents comprising the application papers for the referenced new U.S. patent application.

Pursuant to 37 C.F.R. §§1.52(e) and 1.96, we have attached hereto and hereby submit for filing in connection with the referenced and concurrently-filed patent application two duplicate copies (Copy 1 and Copy 2) of the CD-ROM identified in Appendix II of the specification and incorporated by express reference into the specification.

The two CD-ROMs are identical. Each of the CD-ROMs contains a computer program listing appendix comprising computer software in accordance with a presently preferred embodiment of the invention, and is identified in the specification in Appendix II.

The computer software is for an IBM-PC compatible machine format operating with an MS-Windows operating system. A listing of the directories and files contained on each of the CD-ROMs, including the directory and file names, file types, sizes in bytes, and dates of creation, is contained in Appendix III of the specification attached hereto, and is incorporated herein by express reference.

Assistant Commissioner for Patents  
November 7, 2001  
Page 2

A SETUP.EXE file contained on the CD-ROM should be opened initially to set up and install the files used to operate the computer software on a Windows-based machine.

Sincerely,



Stephen T. Sullivan  
David S. Taylor

STS/DST/akh  
Enclosures

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Sample	Chemical composition	Crystal structure	Phase transition	Temperature range (K)	Electrical resistivity (Ω cm)	Seebeck coefficient (μV/K)	Thermal conductivity (W/mK)	Thermoelectric figure of merit (ZT)
1	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
2	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
3	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
4	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
5	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
6	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
7	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
8	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
9	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
10	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
11	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
12	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
13	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
14	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
15	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
16	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
17	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
18	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
19	Bi <sub>2</sub> Te <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1
20	Bi <sub>2</sub> Se <sub>3</sub>	Rhombohedral	None	300-400	~10 <sup>-2</sup>	~100	~1.5	~0.1

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Anne K Hoole

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<b>NONPUBLICATION REQUEST UNDER 35 U.S.C. 122(b)(2)(B)(i)</b>	First Named Inventor	Micheal P. Iverson
	Title	SYSTEM FOR PERFORMING COUPLED FINITE ANALYSIS
	Atty Docket Number	1082-011

I hereby certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing. I hereby request that the attached application not be published under 35 U.S.C. 122(b).

November 7, 2001

Date



Signature

Stephen T. Sullivan

Typed or printed name

This request must be signed in compliance with 37 CFR 1.33(b) and submitted with the application **upon filing**.

Applicant may rescind this nonpublication request at any time. If applicant rescinds a request that an application not be published under 35 U.S.C. 122(b), the application will be scheduled for publication at eighteen months from the earliest claimed filing date for which a benefit is claimed.

If applicant subsequently files an application directed to the invention disclosed in the attached application in another country, or under a multilateral international agreement, that requires publication of applications eighteen months after filing, the applicant **must** notify the United States Patent and Trademark Office of such filing within forty-five (45) days after the date of the filing of such foreign or international application. **Failure to do so will result in abandonment of this application (35 U.S.C. 122(b)(2)(B)(iii)).**

Burden Hour Statement: This collection of information is required by 37 CFR 1.213(a). The information is used by the public to request that an application not be published under 35 U.S.C. 122(b) (and the PTO to process that request). Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This form is estimated to take 6 minutes to complete. This time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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Anne K Hoole

[illegible]